

ROLE OF CCTs IN THE EVOLVING DOMESTIC ELECTRICITY MARKET

**Kenneth Gordon
Senior Vice President
National Economic Research Associates, Inc.**

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Thank you Assistant Secretary Godley. It's very good to be here. It is a real pleasure to be at another DOE conference.

Take just a moment to thank DOE for sponsoring this as indeed it has sponsored Conferences on a wide variety of topics that I am concerned with.

I think the very first joint NARUC DOE Conference dealt with gas issues that occurred while I was still President of NARUC and I had the opportunity to help put that one together. Subsequently, conferences have been established to bring regulators and other interested parties together to talk about electricity issues and those conferences have been enormously successful in advancing the debate in helping understanding of these issues and it's nice to see it going on in areas that aren't quite as close to the ones that I am concerned with on a daily basis.

Let me offer a couple of disclaimers here. First the title, I'm not an expert on Clean Coal Technologies it will not surprise, I guess many of you to learn. But rather focus on the electricity markets from a regulators and economist now perspective and so I'm going to talk about the environment within which clean coal technologies, but for that matter other technologies as well, will find themselves, I think, over the next few years, and probably indefinitely.

I'm going to talk mostly about the United States, that means I'll be bringing home some of the ideas and issues that John was talking about just a few moments ago. These are world wide trends toward competitive electricity markets at the generation and they are going to change the way the world works. I was struck by one of John's comments toward the end of his talk. He talked about perceptions and the way in which people look at coal.

One of my tasks while I was Chairman of the Massachusetts Department of Public Utilities was to be Chair of the Energy Facility Siting Board of Massachusetts. While I was there, we considered (there isn't a lot of building going on but never the least we did consider) a few projects. Two of them, coal projects, and it was interesting, to me, the degree of resistance that was felt to those projects, although they were in complete compliance with all the relevant environmental laws.

Now you know that coal is not a heavily used fuel in New England, but never the less it has some market there, and I assume would like to have more. There were serious perception issues that the fuel, just as a fuel, even apart from the technologies that were being used, and I think conferences like this and outreach of the sort that I know some of you do, really is important to bring these things home where they can be environmentally acceptable.

Well there are substantial changes taking place in the domestic electricity markets and world wide. In the United States the FERC, in Washington, and the State Commissions particularly a few states, is driving the changes. Fundamental changes, underlie these policy shifts, what is going on is not just a change in attitude that regulators have, that policy makers have, there is technology change, particularly as it affects optimal generation scale. There is no longer the perception that bigger is necessary, in order to be economical, in order to be optimal. New technologies have changed that calculus. There's lowered transaction cost, the ability to organize more complex markets perhaps that's impart a function of the information revolution, and the communication revolutions, a kind of sister regulated area that I also spend time dealing with, our experience in other industries.

We've seen increased reliance on a market operate successfully, in airlines, throughout the transportation industries, in the telecommunications industries and there's no longer any reason to believe the way we did 10 or 20 years ago, that network industries are some how different, some how special. They may still have their own peculiar special aspects but major portions of them are capable, we think of being competitive and operate on a market basis, the ability of markets to handle formerly vertically integrated arrangements, the whole notion of what is the firm, what is the relevant firm, is changing and that's not different from other industries including unregulated industries, so the restructuring that has happened elsewhere is happening here.

Now I don't know what the future electricity industry is going to look like, I know how we're going to get started with regulators taking certain steps. Some of the early determinants of the structure will involve the separation of retailing functions and generation functions from transportation. Transportation meaning transmission and distribution. Continuing regulation of the transportation (if you want to call it that), through new regulator devises such as performance-based regulation that seems to be the near term step that's being taken and in my old territory of Massachusetts, the largest electricity company **NES** has announced that it will spin off all of its generation and operate itself as a distribution company. The transmission is slightly in New England to be separated completely from any of the other functions. John Howe, my successor and Rich Coward, a month or two (a couple months ago, I guess maybe it's longer than that, time does fly when you're having fun), presented a manifesto' on Independent System Operators that I think that may have commanded a good deal of attention. I think NEPOOL, my old pool in the New England area is going to look very different very soon in order to support more effectively the development of competitive markets.

Now we don't know what the outcomes are going to be indeed the point of relying on markets is that we don't know what the right outcome is and so we want to facilitate this process of finding a more efficient future. The forecast the people are making today about five or ten years in the future are probably almost certainly indeed off the mark. So with that cavitate, let me turn to what is happening and what may unfold.

The industry as it has been recently, until recently. Vertically integrated, franchise monology or the practical equivalent, that is ending. Through-going regulation at the state and federal levels, monology the norm. While the monology is ending, I'm not sure the regulation will end right away, but it will shift its focus to questions of access, to questions of interconnection and openness and will get away from the kind of regulation that focused on the utilities planning its resource planning, the impact of environmental constraints, the application of specific technologies, all of that stuff that was done in the old regulated mechanisms, first by utility managements and practically for many years only by utility managements, is going to shift a bit. The firm is an administrative operation.

People make decisions in firms based on whatever information they have in the old regulated utility sector. They didn't face very many constraints in deciding how to proceed. That was the rate base, regulated rate of return world (and I'm not going to go into that in any detail), but the problems that were associated with it are one of the reasons that an evolution has taken place and moved us toward a different world. But the first move away from traditional rate base regulation was not to rely us on markets for planning it was through integrated resource planning going under a variety of names in different places. Both at the state and federal level, support of integrated resource planning was the first response to perceived serious difficulties with the old rate of return rate base regulated systems, and integrated resource planning involves the substitution of a broader set of participants in the administrative planning process.

It was no longer just the firm but a broader set of interveners, very often including environmentalist, some times customers, low income advocates, proponents of particular technologies, anybody who wanted to be in the process, could be in the process and so you had an expanded regulator system that led to the pursuit of a variety of things, some good some not so good depending on where you stood. Certainly more formalized planning processes something that from the beginning that I have thought always a good thing about IRM, IRP, it was more sophisticated. It required more reliance on variable outside data, all that. But it also provided a forum for people who were pursuing narrower interest to make their interest felt., and it might be almost anything.

In my part of the world in New England it was very often the environmental community they were the powerful drivers of IRP, but low income participants some times supporters of particular fuel and that leaves sometimes not just to a better regulatory process but to what economics call rent-seeking, people would pursue profit in any forum and if you can't do it in a market, you may be able to do it in an administrative form. And that's often no so good, But we've now made a critical shift over just a very few years in places like California, like Massachusetts, like Vermont, other places around the country that has decided to move toward competition. It's a critical shift much larger than the shift from rate base regulation to IRP.

This now puts markets in place of the central planning that has occurred, and so there is a lot of inconsistency, going to be a lot of inconsistency with traditional practice, reduce control by firms and regulatory, increase control by customers and for customers typically the most important factor is price. Now I mean real price here, so that the quality dimension is accounted that I won't make the explicit but you could assume I mean that when I talk about price.

People care about price, that's the main thing that I found while I was chairing Massachusetts that the people who came to us was concerned about. It doesn't mean there was a lack of interest in environmental issues that would never be the case in Massachusetts or in Maine but price matters. When people looked to the electric company, they looked to price. Well, this movement to allow broader customer choice, which arises out of the high cost situation that we found ourselves in my part of the world, that California found itself in, really does explain, I think, why the movement toward retail competition, and frankly that's driven by economic development concerns that were acquit in those areas and in that sense perhaps it's been the larger user who has driven the process.

The regulators however, have responded in a somewhat broader fashion understanding full well that if this move toward greater competition is simply seen a way of robbing Peter to pay Paul, that is to say short changing the residential and small commercial customers for the big commercial customers that it would be not a substantial movement almost everywhere efforts are being made to have this be a broad base process and its gaining support, competition under the energy policy act, obviously at the whole sale level has moved forward. FERK with its order's 888, 889 has moved forward in providing a base, again primary at the whole sale level, but the congress is now interested in things beyond the whole sale level. You know that representative Shafer has been interested for a couple of years in the possibility of retail competition, representative **Blaily** now as well, has indicated that it would be a centerpiece for him and so we can expect I think to see some real action in this area.

I'm not sure by the way, whether the federal government really needs to get deeply involved in this like telecommunication the process is moving pretty well without the federal government, but that doesn't mean that the federal government won't move, it could easily do it anyway, as it has in telecom. But what's the end game? What does it mean? Well first and foremost choice for all customers I think in the states the focus has been on choice for all customers that's a centerpiece, not as I said a moment ago cost shifting or passing the buck, in some fashion. Now that's an idealized kind of goal, it may or may not be a realizable goal particularly in the short run. It depends in part, for example on today's rate structures and different states may tell different stories with respect to that. If the cost structure is roughly cost based (if the rate-structure is roughly cost-based) then such games across the board should be possible even though they probably won't be perportionable where there has been an extensive cross subsidy, some of that subsidy will be rung out in the process of introducing competition and so there could be losers as well as gainers it begins to get me into the story that I'm going to conclude with.

A good way to prepare for that future for regulators is to move toward more cost-based rate structures today and to allow companies more flexibility in dealing with their customers and in dealing with competition when they begin to face another core principle is functional separation of

electric companies into generation, transmission and distribution. This is very reminiscent of the telecommunications experience with the MFJ, where AT&T was separated into two components. One a supposedly competitive long distance component and the other was thought to be necessarily a natural monopoly component for local exchange well if you follow that area at all even just casually in the Wall Street Journal or the New York Times you'll know that that easy distinction made only little over 10 years ago has turned out to be not so easy after all and there's a good deal of reintegrated across the two units, but for that time to get the competitive process moving in long distance there was this separation and I think some of the same kind of thinking is operating here, you need to segregate what needs to be regulated from what doesn't need to be regulated. Now I said functional separation I didn't say corporate, but we will see a lot of corporate separation when things are truly functional separated, when transmission is truly made separate and independent from the companies and I think you will see that beginning to happen.

The question will be raised in management minds, "Why own this thing if I can't use it?" And I think that's the practical reason why functional separation may well go beyond that even if it's not required.

The creation of independent system operators with broad responsibility for regional transmission reliability has again independent for the electric companies and everybody else equal assess and nondiscriminatory terms and conditions for all users and probably unbundling of the services as well, I think the telecom experience is worth looking at for those who are interested in seeing where these markets are likely to go from a regulatory point of view. What kinds of short term pools and power exchanges will be created, as a basis for efficient markets is not entirely defined its been fought over in California, it was fought over in Great Britain and there are variety of mechanisms that operate in the Nordic countries in certain South American countries and elsewhere, so there is experience to draw on in designing these new competitive markets.

Regulators usually continue to give statements in favor of things like universal service building in low income protection perhaps environmental concerns will still be built into the process in some fashion but there is a lively debate on traditional regulatory involvement of PUC's in environmental issues and increased reliance on independent environmental regulation, rather than trying to merge the two as they have been in very closely merged in fact in the IRP process. Finally, the rate of return regulation which was kind of the start of a problem from an economist point of view is going to yield to performance-based regulation and price cap regulation, I think we will see the end of rate of return and rate base regulation.

Now let me talk a little bit about the transition process and then quickly turn to some activities that are going on in my two old states of Maine and Massachusetts. The first part of the transition I'm not going to say very much about although the utilities care about it very deeply and indeed so do I.

The so called stranded cost problem, dealing with historic and sunk cost, dealing with so-called uneconomic cost or even future yet to be incurred uneconomic cost is a major issue in these industries and it is my view that these must be accommodated and accounted for fairly and correctly for a variety of reasons. Not least of which is, it would be important to do that in order

to transition into an efficient well functioning market in the future this isn't just a matter of fairness, although I think there is a large fairness question there. It matters for how efficiently the new markets function, but that's not really today's audience's topic, that's why I'm going to move beyond that.

I'm going to talk about stranded benefits which is another set of activities, things that society has traditionally done using utilities as the instrument. That's the IRP process that allowed the extra points, for example for a renewable facility in order to get it into the resource mix. Or that allowed a higher level of expenditure to occur on demand side management for conservation, and so on. Those things were thought to be important and they are still issues that people are concerned about and in a completely freely functioning market, without any intervention they are unlikely to survive or at least to survive at the same levels as they have in the past.

Now let me be candid, that's not all a bad thing, but it's somewhat a bad thing because some of the activities do need to be encouraged and so we need to find new mechanisms. Now I say, let me pause and explain why I made that distinction. One of the problems of the IRP process was that it did become a rent seeking opportunity. Well intentions make no mistake about it, but it did become a rent-seeking operation and with monopoly at the generation end of the market, it was quite possible to get the regulators to agree to pass the cost of that onto customers.

Well. The customers had gotten tired of receiving those costs. But I think they still do want some of the benefits where there are real benefits, certainly that's true, in Massachusetts and in Maine, and it just happens (and this really is fortuitive), because just last week, each of those commissions, which are no longer associated with them, but still send me stuff, from time to time. And from each of them I received a rather large report. That they had completed for the legislature in each of the two states recommending methods for moving forward into the competitive electricity world, and what I want to focus on is the recommendations that have made for dealing with renewables and other kinds of desirable expenditures that the commissions respectively continue to think are important. It's important to deal with this issue up front because once there is a competitive market generation companies will not be regulated as public utilities anymore.

That is division that they will be deregulated. And where do renewable resources fit into that? What the main commission has suggested is the modest requirement that all companies selling power, within the state of Maine (obviously) have to include a minimum amount of renewable in their generation portfolio. Now they don't actually have to do it themselves the renewable requirements could be met with tradeable of credits and a commission standard of some sort will have to be set both as to the portion of the portfolio, whether it will be 2 percent or 3 percent or some number, and also what constitutes a renewable. Because in my experience that will not be obvious to everybody, it can be argued, I suppose by a paleoecologist or somebody that coal is renewable on these terms and I don't think that will happen.

Another way of going about this would be to have rate payers to simply fund through a transmission and distribution levy of some sort the monies that would be necessary to support these kinds of things, and would include by the way, advance site management, conservation and

possibly low income and so on. On the renewables the portfolio kind of scheme seems like a relatively natural one. Notice that in that scheme if renewables are defined broadly and this goes to the comment that John made about staying away from selecting particular technologies, so if you define it fairly broadly then it would simply be automatically a competitive market among all within the category of renewables to try and sell to utilities so that they could meet the regulatory requirement. Now is clean coal likely to be favored in that process, probably not in Maine and Massachusetts, but certainly it is adaptable, because the rationales are the same. The rationale would be that its environmental beneficial in some sense and therefore deserving and perhaps in need of a boost and so therefore would be allowed to participate in this process

In Maine as I said they could generate it themselves or they could buy entitlement and that could be led to production from renewables in some entirely different location, it would not be a requirement that it happen in Maine. Massachusetts, has taken a little bit different view of this, they also wish to preserve an opportunity for renewables, they also are quite explicit in saying that it really is environmental regulators' responsibility to set the environmental regulations, not theirs. They talk about providing information on generation portfolios of different companies so that there could be a market in the purchase of environmental characteristics, from customers another element of choice and they support a mechanism where a charge is made on each kilowatt hour that is solely to create a fund that would be then made available to renewable suppliers on some basis.

I'm no longer with the commission as you know, I probably would have argued against that because I think it looks like a pot of gold which people are going to try to get their hand into and I foresee very difficult administrative process in making that work. They do argue that renewables are more subject to market failure during transmission because of their high capital cost, higher initial investments and long payback periods I think that to is arguable it seems to me that the environmental ground is the stronger argument. The point is that when you get into a competitive world, where people can no longer do things through administrative process you must do things through a separate proceeding, you must explicitly set about the task of doing whatever it is you think needs to be done that the market doesn't do I think that has great virtue (myself).

It makes explicit what the subsidy is one of the great faults of traditional regulation is that subsidy has usually been implicit, hard to identify, hard to eliminate and quite distorting to markets, that's the good part of moving away. Perhaps some will perceive that kind of explicit treatment, kind of sunshine treatment, as bad news because some things may not withstand, "scrutiny" when it's out in the open. But, I think we are to hope that in the kind of society that we live in that really does care about environmental issues when there are good projects, when there are good rationales for some kind of special support they will survive that scrutiny and we won't have to distort the rest of the electricity market in the process of trying to achieve those goals, that's what we're looking for, it's going to be a long hard slog. Folks, anybody who expects overnight results are just kidding themselves.

One of the things I've done while pushing open markets in electricity and reliance on competition on the ground of efficiency and lower price is too in the second breath warn people that it won't

come in 12 months, or 18 months or even 24 months. Some games may but the real games will only unfold as these markets precede as new generation comes on line and as we reorganize the markets in a very fundamental way. Its been going on for over 25 years in telecommunications and its not over yet, just beginning in electricity should be a very exciting time for you and I think that the coal industry will find it's place in this, the resource is too large and too efficient for it not to, but it won't happen in the ways that it has in the past.